

CLAIMS

1. A mobile phone terminal using a plurality of telephone numbers,, comprising:

a first means for demodulating a received call connection request signal into digital data;

a second means for extracting a phone terminal identification information and a phone number identification information from the demodulated data; and

a third means for outputting a signal of call arrival corresponding to the extracted phone number identification information.

2. A mobile phone terminal according to claim 1, wherein said second means compares the extracted phone terminal identification number with a pre-stored phone terminal identification number, and extracts a phone number identification information contained in the demodulated call connection request data, when the two phone terminal identification numbers are equal.

3. A mobile phone terminal according to claim 1, wherein said third means outputs call arrival sounds which are different depending upon the extracted phone number identification information.

4. A mobile phone terminal according to claim 1, wherein

said third means vibrates differently depending upon the extracted phone number identification information.

5. A mobile phone terminal according to claim 1, wherein said third means displays an LED differently depending upon the extracted phone number identification information.

6. A mobile phone terminal according to claim 1, wherein said third means displays call arrival characters which are different depending upon the extracted phone number identification information.

7. A mobile phone terminal using a plurality of telephone numbers, comprising:

a first means for demodulating a received call connection request signal into digital data;

a second means for extracting a phone terminal identification information contained in the demodulated data; and

a third means for outputting a signal of call arrival corresponding to the extracted phone terminal identification information.

8. A mobile phone terminal according to claim 7, wherein said third means outputs call arrival sounds which are different depending upon the extracted phone terminal identification information.

9. A mobile phone terminal according to claim 7, wherein

said third means vibrates differently depending upon the extracted phone terminal identification information.

10. A mobile phone terminal according to claim 7, wherein said third means displays an LED differently depending upon the extracted phone terminal identification information.

11. A mobile phone terminal according to claim 7, wherein said third means displays call arrival characters which are different depending upon the extracted phone terminal identification information.

12. A call responding method of a mobile phone terminal using a plurality of telephone numbers, comprising the steps of:

(a) demodulating a received call connection request signal into digital data;

(b) extracting a phone terminal identification information and a phone number identification information from the demodulated data; and

(c) determining how to respond to the call connection request based on the extracted phone number identification information.

13. A call responding method of a mobile phone terminal using a plurality of telephone numbers, comprising the steps of:

(a) demodulating a received call connection request signal into digital data;

(b) extracting a phone terminal identification information from the demodulated data; and

(c) determining how to respond to the call connection request based on the extracted phone terminal identification information.

14. A call responding method according to claim 12 or 13, wherein ~~said~~ step (c) comprises the steps of:

reading out data of call responding method stored in connection with the extracted phone terminal identification information;

checking if the read data of call responding method indicates call rejection; and

transmitting a call rejection signal to a base station based on said checked result.

15. A call responding method according to claim 12 or 13, wherein said step (c) comprises the steps of:

reading out data of call responding method stored in connection with the extracted phone terminal identification information;

checking if the read data of call responding method indicates call reverting to a voice mailing system; and

transmitting a call reverting signal to a base station

based on said checked result.

16. A call responding method according to claim 12 or 13, wherein said step (c) comprises the steps of:

reading out data of call responding method stored in connection with the extracted phone terminal identification information;

checking if the read data of call responding method indicates time-conditional call connection; and

transmitting a call connection restricting signal to a base station based on said checked result and current time.

17. A call responding method according to claim 12 or 13, wherein said step (c) comprises the steps of:

(c1) reading out data of call responding method stored in connection with the extracted phone terminal identification information;

(c2) checking if the read data of call responding method indicates region-conditional call connection; and

(c3) transmitting a call connection restricting signal to a base station based on said checked result and current location of the mobile phone terminal.

18. A call responding method according to claim 17, wherein said step (c1) transmits the call connection restricting signal based on said checked result and information identifying the base station contained in the

demodulated data.

19. A call responding method according to claim 12 or 13, wherein said step (c) comprises the steps of:

reading out pre-stored data of call responding method corresponds to the extracted phone terminal identification information;

checking if the read data of call responding method indicates user-conditional call connection; and

transmitting a call connection restricting signal to a base station based on said checked result and user's key selection.

20. A call processing method of a mobile switching node allowing a plurality of telephone numbers for single mobile phone terminal, comprising the steps of:

(a) searching a phone number identification information corresponding a called telephone number contained in a received call request signal;

(b) checking whether the phone number identification information discovered in said step (a) is associated with a mobile phone terminal using a plurality of telephone numbers; and

(c) processing the call request differently based on said checked result.

21. A call processing method according to claim 20,

wherein said step (c) comprises the steps of:

extracting data of call processing method stored in connection with the discovered phone number identification information; and

processing the call request differently based on the extracted data of call processing method.

22. A call processing method according to claim 20, wherein said step (c) comprises the steps of:

searching a phone terminal identification information corresponding to the called telephone number, the phone terminal identification information being stored in connection with the discovered phone number identification information based on the checked result; and

transmitting a call connection request signal consisting of both the discovered phone number identification information and phone terminal identification information to a mobile phone terminal.

23. A call processing method according to claim 20, wherein said step (c) comprises the steps of:

reading out data of call processing method stored in connection with the discovered phone number identification information;

checking if the read data of call processing method indicates call rejection; and

rejecting the call request based on said checked result.

24. A call processing method according to claim 20, wherein said step (c) comprises the steps of:

reading out data of call processing method stored in connection with the discovered phone number identification information;

checking if the read data of call processing method indicates call routing to a voice mailing system; and

routing the call request signal to the voice mailing system based on said checked result.

25. A call processing method according to claim 20, wherein said step (c) comprises the steps of:

reading out data of call processing method stored in connection with the discovered phone number identification information;

checking if the read data of call processing method indicates time-conditional call connection; and

restricting call connection based on said checked result and current time.

26. A call processing method according to claim 20, wherein said step (c) comprises the steps of:

(c1) reading out data of call processing method stored in connection with the discovered phone number identification information;

(c2) checking if the read data of call processing method indicates region-conditional call connection; and

(c3) restricting call connection based on said checked result and current location of a mobile phone terminal to which the discovered phone number identification information corresponds.

27. A call processing method according to claim 26, wherein said step (c3) restricts call connection based on said checked result and an identification information of a base station paging the mobile phone terminal.

28. A call processing method of a mobile switching node allowing a plurality of telephone numbers for single mobile phone terminal, comprising the steps of:

(a) searching a phone number identification information corresponding a called telephone number contained in a received call request signal;

(b) checking whether the phone number identification information discovered in said step (a) is associated with a mobile phone terminal using a plurality of telephone numbers;

(c) adding a phone terminal identification information stored in connection with the discovered phone number identification information to a paging signal and transmitting the paging signal; and

(d) processing the call request based on a signal received from the mobile phone terminal responding to the paging signal.

29. A call processing method according to claim 28, wherein said step (d) comprises the steps of:

receiving the signal responding to the paging signal;
extracting a call responding data from the received responding signal; and

processing the request call differently according to the extracted call responding data.

30. A mobile phone system allowing a plurality of telephone numbers for single mobile phone terminal, comprising:

one or more mobile switching nodes of searching a phone number identification information corresponding to a called telephone number contained in a call request signal received via telephone network, detecting a phone terminal identification information associated with the discovered phone number identification information, and processing the call request differently based on the discovered phone number identification information and/or the detected phone terminal identification information; and

one or more mobile phone terminals of extracting a phone terminal identification information and/or a phone number

identification information from a call connection request signal received via radio from one of the mobile switching nodes, and determining how to respond to the call connection request based on the extracted phone number identification information.

31. A voice mailing method allowing a plurality of telephone numbers for single mobile phone terminal, comprising the steps of:

(a) searching for a phone terminal identification information corresponding to a called telephone number received via telephone network;

(b) checking whether the phone terminal identification information discovered in said step (a) is associated with a mobile phone terminal using a plurality of telephone numbers;

(c) transmitting a guiding message for voice recording based on said checked result; and

(d) storing both a received voice message and information on the discovered phone terminal identification information in a part of database, the part of database being separated from a storage area for previous voice messages.

32. A voice mailing method allowing a plurality of telephone numbers for single mobile phone terminal,

comprising the steps of:

(a) searching for a phone number identification information corresponding to a telephone number received via telephone network;

(b) checking whether the phone number identification information discovered in said step (a) is associated with a mobile phone terminal using a plurality of telephone numbers;

(c) ~~transmitting~~ a guiding message for voice recording based on said checked result; and

(d) storing both a received voice message and information on the discovered phone number identification information in a part of database, the part of database being separated from a storage area for previous voice messages.

33. A voice mailing method according to claim 31 or 32, further comprising the step of transmitting via radio a signal informing that a voice message has been arrived newly.

34. A voice mailing method allowing a plurality of telephone numbers for single mobile phone terminal, comprising the steps of:

(a) searching for a phone terminal identification information corresponding to a telephone number contained

in a call request received via telephone network;

(b) checking whether the phone terminal identification information discovered in said step (a) is associated with a mobile phone terminal using a plurality of telephone numbers; and

(c) retrieving both all of voice messages and information on phone terminal identification information associated with each voice message based on said checked result, the retrieved voice messages and the information being stored in connection with the plurality of telephone numbers.

35. A voice mailing method allowing a plurality of telephone numbers for single mobile phone terminal, comprising the steps of:

(a) searching for a phone number identification information corresponding to a telephone number received via telephone network;

(b) checking whether the phone number identification information discovered in said step (a) is associated with a mobile phone terminal using a plurality of telephone numbers; and

(c) retrieving both all of voice messages and information on phone number identification information associated with each voice message based on said checked

result, the retrieved voice messages and the information being stored in connection with the plurality of phone numbers.